

| River and station.                     | Flood stage. | Above flood stages—dates. |     | Crest.       |       |
|----------------------------------------|--------------|---------------------------|-----|--------------|-------|
|                                        |              | From—                     | To— | Stage.       | Date. |
| <b>MISSISSIPPI.</b>                    | <i>Feet.</i> |                           |     | <i>Feet.</i> |       |
| Illinois:                              |              |                           |     |              |       |
| Peru, Ill.....                         | 14           | 14                        | (1) | 15.1         | 17-18 |
| Henry, Ill.....                        | 7            | 13                        | (1) | 8.9          | 29-31 |
| Beardstown, Ill.....                   | 12           | 14                        | (1) | 14.9         | 26-27 |
| Meramec: Pacific, Mo.....              | 11           | 13                        | 16  | 14.4         | 16    |
| Bourbeuse: Union, Mo.....              | 10           | 15                        | 15  | 13.6         | 15    |
| St. Francis: Marked Tree, Ark.....     | 17           | 23                        | (1) |              |       |
| Arkansas:                              |              |                           |     |              |       |
| Fort Smith, Ark.....                   | 22           | 14                        | 16  | 25.0         | 15    |
| Dardanelle, Ark.....                   | 20           | 14                        | 17  | 22.0         | 16    |
| Neosho: Fort Gibson, Okla.....         | 22           | 14                        | 14  | 22.0         | 14    |
| Petit Jean: Danville, Ark.....         | 20           | 13                        | 17  | 23.3         | 15    |
| Cache: Patterson, Ark.....             | 9            | 17                        | (1) |              |       |
| Red:                                   |              |                           |     |              |       |
| Index, Tex.....                        | 27           | 18                        | 18  | 27.0         | 18    |
| Fulton, Ark.....                       | 28           | 16                        | 27  | 31.4         | 19    |
| Alexandria, La.....                    | 36           | 26                        | (1) |              |       |
| Sulphur:                               |              |                           |     |              |       |
| Ringo Crossing, Tex.....               | 20           | 12                        | 13  | 25.4         | 14    |
| Finley, Tex.....                       | 24           | 21                        | 26  | 22.9         | 23    |
| Cypress: Jefferson, Tex.....           | 18           | 16                        | 31  | 27.8         | 18    |
| Ouachita: Camden, Ark.....             | 39           | 31                        | (1) |              |       |
|                                        |              | 17                        | 18  | 30.6         | 18    |
| <b>WEST GULF DRAINAGE.</b>             |              |                           |     |              |       |
| Sabine:                                |              |                           |     |              |       |
| Logansport, La.....                    | 25           | 23                        | (1) | 28.2         | 26-27 |
| Bon Wier, Tex.....                     | 20           | 23                        | 29  | 21.1         | 25-26 |
| Orange, Tex.....                       | 4            | 23                        | (1) | 5.7          | 25    |
| Neches:                                |              |                           |     |              |       |
| Rockland, Tex.....                     | 22           | 26                        | 26  | 22.0         | 26    |
| Beaumont, Tex.....                     | 7            | 22                        | (1) | 10.4         | 25    |
| Trinity:                               |              |                           |     |              |       |
| Dallas, Tex.....                       | 25           | 12                        | 20  | 38.1         | 15    |
| Trinidad, Tex.....                     | 28           | 14                        | 27  | 38.5         | 21    |
| Long Lake, Tex.....                    | 40           | 19                        | 28  | 41.5         | 25-26 |
| Liberty, Tex.....                      | 25           | 22                        | (1) | 27.5         | 28-29 |
| Elm Fork: Carrollton, Tex.....         | 7            | 13                        | 14  | 12.8         | 14    |
| Brazos, Little: Little River, Tex..... | 30           | 13                        | 13  | 37.0         | 13    |
| Gaudalupe:                             |              |                           |     |              |       |
| Gonzales, Tex.....                     | 22           | 14                        | 15  | 23.6         | 15    |
| Victoria, Tex.....                     | 16           | 15                        | 21  | 21.7         | 22    |
| <b>COLORADO DRAINAGE.</b>              |              |                           |     |              |       |
| Gila:                                  |              |                           |     |              |       |
| Kelvin, Ariz.....                      | 5            | 28                        | (1) | 6.4          | 29    |
| Gila Bend, Ariz.....                   | 5            | 28                        | 28  | 6.0          | 28    |
| Salt: Phoenix, Ariz.....               | 5            | 27                        | 28  | 9.6          | 27    |
| <b>PACIFIC DRAINAGE.</b>               |              |                           |     |              |       |
| Willamette: Eugene, Oreg.....          | 10           | 7                         | 7   | 12.0         | 7     |
| Santiam: Jefferson, Oreg.....          | 10           | 7                         | 7   | 11.0         | 7     |
|                                        |              | 29                        | 29  | 12.0         | 29    |

<sup>1</sup> Continued at end of month.

### MEAN LAKE LEVELS DURING DECEMBER, 1923.

By UNITED STATES LAKE SURVEY.

[Detroit, Mich., Jan. 7, 1924.]

The following data are reported in the "Notice to Mariners" of the above date:

| Data.                                         | Lakes. <sup>1</sup> |                     |              |              |
|-----------------------------------------------|---------------------|---------------------|--------------|--------------|
|                                               | Superior.           | Michigan and Huron. | Erie.        | Ontario.     |
| Mean level during December, 1923:             | <i>Feet.</i>        | <i>Feet.</i>        | <i>Feet.</i> | <i>Feet.</i> |
| Above mean sea level at New York.....         | 601.78              | 578.80              | 571.29       | 244.47       |
| Above or below—                               |                     |                     |              |              |
| Mean stage of November, 1923.....             | -0.25               | -0.28               | +0.29        | +0.13        |
| Mean stage of December, 1922.....             | -0.24               | -0.38               | +0.18        | -0.17        |
| Average stage for December last 10 years..... | -0.58               | -1.27               | -0.49        | -0.91        |
| Highest recorded December stage.....          | -1.35               | -3.78               | -2.24        | -3.14        |
| Lowest recorded December stage.....           | +0.58               | -0.20               | +0.43        | +1.04        |
| Average relation of the December level to—    |                     |                     |              |              |
| November level.....                           |                     | -0.2                | -0.2         | -0.2         |
| January level.....                            |                     | +0.1                |              | -0.1         |

<sup>1</sup> Lake St. Clair's level: In December, 1923, 573.97 feet.

### EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS. DECEMBER, 1923.

By J. B. KINCER.

The month, as a whole, was favorable for agricultural interests in most sections of the country, though it was generally unfavorable for farm work in the Southern States because of frequent rains and wet soil, while outdoor operations were hindered considerably by the same cause in the Ohio Valley area. Unusually mild, open weather was experienced in the central and northern Great Plains, and seasonal farm operations made good progress.

The principal winter-wheat area was bare of snow throughout almost the entire month, but the weather was not severe enough to be materially harmful until near the close when the first severe cold wave of the season overspread the Northern and Central States. Grain fields were generally protected by snow cover during the prevalence of this cold wave in the Northern, Western, and Northwestern States, including most of the wheat fields in Kansas, but some slight injury was reported from freezing locally in the Ohio Valley States. Earlier in the month there was some damage by overflow in some parts of the Ohio Valley.

Corn fields were soft and muddy during much of the month in the East-Central States, and husking was considerably delayed, especially in parts of the Ohio Valley. Husking made good progress, under favorable weather conditions, in the Great Plains and more northwestern States. Conditions were rather unfavorable for completing cotton picking in the western portions of the belt, but this work made good progress in the far Southwest, including the Imperial Valley of California.

A cool wave near the middle of the month damaged truck crops some in Texas and, at the same time, some slight harm was done to tender vegetation in central Gulf districts. Rain during the first half of the month benefited truck in the Gulf States, but drier weather and more sunshine were needed the latter part.

The month was unusually favorable for stock in the great western grazing districts until near its close when stormy weather and a severe cold wave prevailed. This storm mostly covered the range with snow, and the low temperatures unfavorably affected stock in the central and northern Rocky Mountain districts. The snow was beneficial in Montana, however, in replenishing stock water on the range, while the weather was generally helpful to stock interests east of the Plains area. A severe drought prevailed in California which unfavorably affected the range and livestock.